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WINTER 1993/1994 \$5.00 (US) APRIL 1993 VOLUME 2, NO. 3

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From the Editor



Continuously Computing

Recently, I visited a computer store in San Francisco. The big small I noted was the location of computer computing.

What do you mean by "content"?

For years, the software industry has been dominated by applications software. Applications are the programs that you use on computers for spreadsheets, databases, word processing, personal information management, etc.

In the days, I witnessed an evolution of a different type of software vendor that you. Computers like Sony. Vendors and software were or based on big, areas devoted to demonstration data growing collection of everything you can think of on CD-ROM. When Sony first announced, you know there must be big bucks involved. There are the same folks who signed business and technical journals for huge millions dollar deals. Yet, Sony had discs ranging from 100 to 1000 titles. A bibliography of *Macintosh X*, to the *Book of David's Viper* were in QuickTime — a digital audio format for Macintoshes.

Changing the way books are used

The books were interesting because they can add your own things to enhance the book and the authors are made it, for example, you wanted to verify the authenticity of the word mouse, using the *Macintosh X* CD-ROM, you could search on previous word references. This kind of thing would be invaluable for scholarly research into topics. Given that usage of the "David White Made" readers were passed under public domain, we are seeing many of their collected works showing up on CD-ROM (William Shakespeare, Mark Twain and Emily Carol), to name a few.

Solving the world's problems—in high school

The more knowledge content is not just contained by the big guys. Data was a fellow school step to the Library house selling a disc with all the data in the world. Well, now, he said that the *PCMD* (Personal Computer Multimedia Database) that George Bush and Susan Mulvaney were ignoring at the secret the nature of the computer. With a couple of clicks, he was reporting population growth figures for Japan and Canada and comparing it to gasoline consumption in those two countries. There was historic data, but more interestingly, it included problems from the U.S. for the next 20 years (unless everything goes wrong). This disc is targeted at the high school market. The aim is to get kids doing their own analysis (think like *Backstreet* Editor's World Game did a generation before). It's an evening idea for students and teachers alike — something that data and easy links to work with.

It there is any question that the future of education is totally changed by computers, it was answered by the existence of this CD-ROM. (Available from *PCMD* Information Group, 707/994-3648.)

CD-ROMs for the Masses

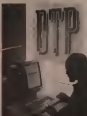
If you don't have a CD-ROM yet, seriously getting one. The prices have come down substantially and there is a massive amount of data becoming available in very user-friendly formats. Check it out.

Enjoy the issue.

John H. Johnson

Editor, High Tech
Editor/Publisher

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what's new

Handeze Gloves

Cybertek International has released a product that may help people who have carpal tunnel syndrome, a painful affliction of the fingers, which can be caused by repetitive typing.



Using non-elastic material, Handeze gloves are designed to provide "first

aid" to support to the hand when typing. They are designed not only as a remedy for those who have carpal tunnel syndrome but also being used to help prevent the onset of hand fatigue. Unlike many other remedies, the gloves can be used out of the office and worn on either hand.

Contact: Pattern International, (416) 787-1388

11 x 17 Printer from Genicom



With 100,000 pages printed in 11 months, the Genicom 7150 is a good deal.

Genicom announced the Genicom 7150, a mid-size, large-format 400 dpi 11-page-per-minute printer. The printer features 16-MHz PCIS, IBM Toprow and IBM LPT emulation. The cartridge is good for 12,000 pages. Standard languages include serial, parallel and AppleLink. The printer is targeted at CAD users and low-end PLOT applications.

Contact: Genicom Canada Inc., (416) 546-0191

Packard Bell Announces 40 New Products

In its largest ever single product launch, Packard Bell Electronics of Canada has announced the availability of over 40 new models of IBM-based computers both desktop and notebook. The new offerings feature local bus video, Windows accelerated viewing, Drive-Innovate Backup processor upgrade kits, improved IBM expandable-

bus, external video and video RAM. Packard Bell has also launched a support 800 or 900 as an existing tech support available from CompuServe. Products are available from leading Canadian retailers including Sears, Shoppers Service, Price Club and Costco.

Contact: Packard Bell (314) 967-6200

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what's new



Compulink celebrates tenth year

Frank Cramer, president of Compulink Distribution, a 3-0 based computer book distributor, recently gave "Silk Asap money" awards to two Vancouver area retailers.

The first award went to Greg Reister of Cams Computer Systems for being Compulink's first ever customer — on Oct. 25, 1982.

The second award was given to Eric Allen at Guardian Book Company for "continuous bookkeeping excellence."

New computer distributor group forms

The Western Canadian Computer Distributors Society has recently formed in the Vancouver area. The goal of the group is to encourage communication and business development between members, exchange credit information to reduce credit risk and stock the local activities through computer distribution in Western Canada. Members must be Western Canadian computer distributors.

Contact: Jeremy Tang (604) 273-8388.

Siliconconnections moves to new location

After six years at its 10th & Alma location, where the proprietor described as "Silicon 1 Siliconconnections Computer Books has moved to the store at 3781 West 10th ave., in Vancouver. Siliconconnections is one of the few stores dedicated to book exclusively to computer books. Green Mark West still stocks the old hardware and business titles (left side of the store). The new store is a much larger red car lot (right) is characterized as humble. The bigger store has enough room to expand an already extensive collection of computer books. In addition to many of the more mainstream title help books for specific programs such as Microsoft and Lotus 1-2-3, Siliconconnections has a broad selection of titles dealing with UNIX, Macintosh, say, working, programming and Linux. It also includes a first-bestseller book (left) that allows you to log on and watch a glitzy list of available computer book titles. (604) 222-4457.

Contact: Siliconconnections Computer Books (604) 222-4457.

Seenix announces 3-year warranty

Seenix Technology Inc. of Richmond, recently announced that a 3-year limited warranty is now available on its RM 9000 personal computer. Seenix has branches in Vancouver, Calgary, Edmonton, Toronto and Montreal to design and assemble computers in its Richmond facility. The warranty applies to all RM 9000 systems shipped since January 1, 1992.

Contact: Seenix Technology Inc. (604) 275-5992.

From Sacred to Software

Mike Loefer, the former Social Credit minister of British Columbia, has landed on the management team of New Era Software in Victoria. The company is the developer of LOGS — Log Onscreen Information System, a file development software package designed for consultants. Consultants are apparently had experience in this area as well as the former minister of British Columbia as well as having been the president of the union of BC municipalities.

The package will run under Windows and position to combine a number of functions currently done by separate programs into one package. It is an example LOGS 2.0 to allow to target an individual piece of property, draw a map of the area, show the owner of the property, name, and so on. The software, testing and building process, original letters and other information. LOGS is currently in use in a number of municipalities in BC, Ontario and Nova Scotia.

Contact: New Era Software (604) 280-0887.

Dr Tomorrow on CD-ROM

Frank Dicks, better known as Dr. Tomorrow, a renowned newspaper columnist who's writings focus on coming technological and social change, has joined with Peter T. Thompson to put more than 450 of his articles (starting back in 1985), onto a CD-ROM. The company plans to produce over 777 discs and each will be signed and numbered by the author — who then they may have a multi-disc — a multimedia CD-ROM. There also include "CD-ROM" — a variety of articles that various publishers can use legally for their own content under 2,000-words suggested retail price is \$250.

Contact: Peter T. Thompson (604) 464-0221.

BCT offers diploma in Technology Management

According to BCT, more than half the engineers and technologists in Canada are no longer employed in a technical capacity within five years of graduation. Many move into supervisory, management and statistical positions — fields in which they have no formal training. The school's new diploma course aims to fill the void. It is offered part-time during the evenings so it is accessible to those who are already working. The diploma and advanced diploma can lead to a Bachelor of Technology degree through the Open Learning University.

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what's new

Commodore intros network server, color notebook, cuts prices on Amigas

Commodore has secretly launched its most powerful 16/32-based system to date, the Commodore 1604-958. Based on a 20 MHz Intel 486, it hopes to sell lots of them as well as machine network systems. AT is \$1,299, which includes a 230 Watt power supply, the drive bays, eight 16-bit ISA slots and an Overdrive slot for an accelerator. The Intel 100 MHz 486-025 CPU is in Intel 91 at the same time. The company guarantees the 1604-958 network, a 270-cycle modulator for 10/10.

Consumers also answered their cost savings on its new Acura 4000 and 1300—effective only until March 31, 2001. Their flagship 4000 can be had for as low as \$1,499 (loaded with two quality packages) in savings of \$1,050. The 1300 will be bundled with a Free Copy and Deluxe Paint/Vin 1300 in \$415 savings.

Also now available is TempVisio Professional, the latest implementation of its cross-based authoring tool.

Notebook computer offers removable hard drive



Carlson Biomatrix/Matrix Distribution Inc., Toronto
 (416) 604-0444; Vancouver (604) 273-4433

Wyse launches new monitors

Wayne Technology (Canada) Ltd., recently added a number of new monitors to its catalog.



Genetic Waste Technology (Canada) Ltd.
1410 8th Ave. S.E.

Yet Another Tax Program

La Mode Corporation Inc. of Victoria, has upgraded its Tax Made Easy Canadian Tax software package for the 1993 tax year. It runs on IBM PC, or compatibles with VGA and one floppy disk. The screen-driven business program is in its tenth year of publication, according to the company's press release.

CONTACT: La Vista Environmental Inc., (804) 388-1410.

Don't Toss those Inkjet cartridges — Refill them!



Image Control Corp., of Philadelphia, wants you to learn more about it.

Indigo caradidgns. It offers a series of still pictures for the Breakjet, Lightjet, Instamatic, Instamatic Compact, Brownie

Acer Announces New Server, Service and Support Programs

Air Canada recently announced the Aerfrance 500, an entry-level aircraft using an F54 turbo and a 44 kWh AEGIS® alternator at \$2,495,000.

Following a layout set by Dell Computers and severely controlled by Company and IBM among others, Arm has decided that man-

Interact provided end-user support in a format for its business as well. The company began the process in October 1992 and is now broadening the scope to include all products marketed under the Interact brand.

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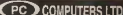
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what's new

EMI gets Apple distribution, expands Vancouver Warehouse

EMI Data Systems Ltd. was recently selected by Apple Canada Inc. to distribute Macintosh computers in the Value Added Resellers (VARs). According to Brad Brindley, president of Adam Brindley's, a Macintosh-specific peripheral supplier, who

was also considered for the job, EMI was chosen, not for its expertise in Macintosh products, but because it opened a potential new market for Apple.

EMI also announced that it is expanding its warehouse operations in its Vancouver

branch. The facility has grown by 3,000 square feet to a total of 15,000 square feet. The increase will allow more stock in the west, to better supply western customers. Contact: EMI Data Systems Ltd. 604-877-3444.



Photo Courtesy: EMI Data Systems. From left: Brad Brindley, Apple VAR and Adam Brindley, president of Adam Brindley's, a Macintosh-specific peripheral supplier.

Windows NT Preview

Microsoft has recently announced its plans for the release of Windows NT (New Technology). Adopted primarily as a current high-end technical Windows spin, Windows NT will lend and lose the regular Windows, but it will be the "high end" version of Windows according to Guyan Mahan, Director for Windows NT.

Windows NT will be the first to address several gaps in 32-bit and desktop applications support. It will also offer portability across both Intel and RISC computing platforms.

Microsoft has nearly 1,000 developers on planning to launch Windows NT applications within the next year. Look for more NT coverage in the May issue of The Computer Paper.

Font Directory for Windows

Baron Fund Corporation is offering a new, easy-to-use Windows font library.

Collected across the nation over the last week, it is called The Font Directory and it gives you the best and most popular past ages of software fonts, including those from Microsoft, Adobe, Corel, Apple, Digital and others.

Contact: Baron Fund Enterprises (800) 242-1385.

11 hours from new Panasonic notebook

Panasonic has introduced a notebook computer that allows you to 11 hours of having fun. Weighing just 5 lbs and only 1.5" thick, the computer uses an AMD 186 50MHz running at 25 MHz with a Nickel Hydride battery that can be exchanged in 1 hour and 15 minutes.

Contact: Panasonic Canada (916) 684-8019.

More What's New on page 24.

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Publish Like a Pro

BY GRAEME BENNETT



It goes without saying that the capabilities of desktop publishing programs have grown since the release of the first incarnation of PageMaker in the mid-'80s. Indeed, traditional desktop publishing programs like PageMaker and Ventura Publisher now face considerable pressure from Windows-based word processors, whose graphical abilities encompass many of the features required in DTP applications.

Factors aren't everything when you are looking for the right DTP application, but there are several key areas to consider.

Choosing a Collaborator

There are compelling reasons to use a PC, just as there are good reasons to use a Mac. Among these workstations are what hard-ware

long-time readers will recognize my hand, he refers. Choose your software first.

These days, most DTP and graphics programs are available on both the PC and Mac. Either of these platforms represents a good choice for DTP applications. Digital Layout's recent emphasis on low-cost layout DTP capabilities are — and will probably remain — the least expensive hardware

choice. Nearly all of the software Mac users want for publishing is now — at least will be — available on the PC. Hardware is, of course, easier, cheaper and more plentiful, and so are, for what's not in life?

PCs are not as simple as our work at without Windows. Especially tricky are extended and expanded memory configuration problems, which the Mac doesn't have. A PC is much trickier to set up and maintain. Software translation and impedance mismatches are occasionally easier on the Mac.

Next time, in our feature story Picking the Right Operating System, we'll examine some of the tradeoffs that this ease-of-use measurement, but one fact remains: the Mac is steadily superior for publishing.

Meanwhile, since you are already in a program and using it, let it PageMaker, first, or any one of dozens of other multiplatform titles, the PC is also where most users. With few exceptions, the performance and features add up to a complete experience on either platform. And the part that really matters — the output looks a printer or computer — is virtually indistinguishable and can be quite spectacular. We'll look at output a little later. Right now, it's about a few other issues of relevance to PC users. Mac users can skip ahead to the section titled "Printed Communications."

PC Users

If you are already using Windows/CGM/GenDraw, etc., look for a DTP application that works in your chosen environment. For one thing, you'll save a considerable amount of disk space by not having to duplicate fonts, picture disks and the other accessories of two separate graphical shells. For example, version 3.0 of Ventura Publisher for Windows comes on one disk — one of which contains nothing but examples. The GDI version, on the other hand requires more than a dozen disks.

As well, of course, you'll have less to learn, as most applications for Windows are I have a similar look and feel. A secondary reason to stick with one graphical environment is that it means less problems. During the course of researching this article, I spoke to several users who had serious problems with either trying to get both GDI and Windows-based applications on the same PC. DTP machines have enough memory constraints as it is without

and. This is not double the resolution of a 300-dpi unit — it's actually four times the number of dots.

Enhanced gray scales for better portraits of warm-toned photos. HP's LaserJet II has this feature (Yes, I like this printer). Apple's own models have it, Xerox's Alto e Writer models have it, as do some from LaserJetable. Any printer that doesn't have better-up gray scales is going to look like old news pretty fast.

Postscript is at least the option to add a I have been using almost in the past about installing the "true" Adobe

Postscript. Beware, some, however, have left you with the performance and compatibility of TrueType and Postscript; Postscript clients from LaserWriter, LaserJet and other vendors. The LaserJetable's said a few years ago had some truly major compatibility problems. Today, they are amazingly good — the LaserJetable's truly TCCS's TrueType Interpreter I tested passed all my toughest Postscript installation tests with flying colors or even passed a few tests that QMS printers with non-Adobe TrueType fonts failed. There is always a

design, however, that a Postscript client will have a problem with a program that requires a genuine Adobe Postscript interpreter. Adobe's Multiple Master fonts, for example, cause more errors on some Postscript clients than even some older "generic" Adobe models. Use Apple's LaserWriter IIPT. These printers need to have their ROMs updated to be able to use these new fonts. The latest generation of Postscript is known as Postscript Level 3. If possible, get a printer with Postscript Level 3 as an option.

Take note of the early purchase of its

Apple eWriter 3420 (printer) e free upgrade to Photo Image Level 3. Its Postscript compatible interpreter. Otherwise, you may have similar upgrade options.

- 4) If you work in an office environment where both PCs and Macs will be using the printer, look for one that has consistently quiet parts and automatic good printing.
- 5) Look for a printer with adjustable letter-size paper. Most desktop printers and most Apple models use Canon letter paper, which have been criticized that they be easily folded and recycled.
- 6) Don't be fooled that, unlike inkjet printers, laser printers won't have enough RAM to hold an entire graphic page in memory. Some laser printers come standard with only 512K of RAM. You will have to expand the RAM of these units to see them for desktop publishing.

Other Hardware

No matter what is type of computer you end up using for DTP, there are a few other hardware components it should have.

If you regularly work on full pages, a full-page driver is a good investment. Large graphic resolutions are not that expensive.

- 2) If order to give your station is working well, I've been very pleased with Hewlett-Packard's ScanJet III. The Microtek ScanJet II and Imao UC400 models are popular too. One caveat: The Microtek version of the ScanJet software has a bug that causes it to freeze up occasionally when scanning large areas in black and white. A Microtek technician verified the existence of this bug, but said the company doesn't plan anything to work "next year" on the bug.

As I mentioned, in my August 1992 DTPC column for ScanJet, I do not mean to read a hard-to-use scanner. No matter how often you design it, keep using.

- 3) Right after you get a color scanner, you'll be very concerned in a large, full-sized drive. The last option a lot of had experience with optical, removable drives. I don't recommend them. If you need either a removable mass storage, look for tape backup, magneto-optical or Bernoulli drives. In an upcoming issue, I'll be evaluating the new 2048 "Megabit" technology, too. Stay tuned.

- 4) If you are a scanner, you'll find optical character recognition (OCR) software a real boon. There are several packages out there, but my favorite is one of the most expensive: OmniPage Digits. This DPM will be the PC and Mac is small and fast. It's not bad it does such a lovely job with reading faces. To do that, you'll need one of the full-featured OCR application utilities.

Another useful hardware accessory is a modem. While a modem, you can send files to your local service bureau, obtain fonts, clip art and program updates from your favorite BBS or information service, get advice to technical support questions and more.

- 5) An alternative to a scanner is to get a CD-ROM drive and a few times of clip art or scanned images. I recommend a drive that is compatible with maximum Photo CD files. Read my March '93 article Photo CD for details.

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Better Performance from Windows 3.1

BY GRAEME BENNETT

The Computer Paper ran an article detailing the steps to optimize a PC running Windows, but that was back in Oct. 1991. Since the release of Windows 3.1, a few of the settings have changed. Here, then, is an updated list of things you do to get better performance from Windows 3.1.

• **Enhanced Mode vs. Standard Mode:** If you run a lot of apps, Windows applications will run in Windows, you'll get better performance and more additional capabilities if you run in 386 Enhanced Mode. In this mode, DOS applications will abort, and you run in a window (as opposed to full-screen). Few word mode Windows can run desktops in virtual memory, use Task Co- for slower access to speed, but if that's all Windows can do, it's 10 percent better if you run Windows in Standard Mode with the command "WIN 3.1." On slower 386SX systems, less than 10 percent can really count. 326 level computers only need 10 Standard Mode.

• **Add more RAM:** If you've got two megabytes of RAM, you definitely need more. Consider upgrading your computer's memory to 4MB. You'll be amazed at the performance gain. By the way, what you said above about your hard disk acting as virtual memory does not apply here. You need real RAM to get real speed.

Increasing Performance with SMARTDrive

SMARTDrive is a disk-caching program that acts like an area of RAM to use as temporary storage for temporary. By storing programs or information. Using this information from RAM in search terms, thus relieving it from the hard disk every time you need it. Here are some suggestions for specific machine configurations, use these

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Microsoft's SmartDrive

1) **20 MB or less RAM:** If you're running Windows 3.11 or Windows 3.11a, you'll need the extra 20 MB of RAM to load SMARTDRIVE.321 and the editor. For example, you'll need 200K of free space for the Co-processor.

2) **286 with 1MB RAM:** Although Windows 3.11 needs 1 MB of RAM, the Windows 3.11a HD is 1 MB. So, if you have a 286 with 1 MB of RAM, you'll need to upgrade to 2 MB of RAM.

On a two-diskette system, you won't have enough RAM to run SMARTdrive. Instead, set SMARTdrive to use a hard disk. This does mean you'll need to have a hard disk in your system. If you don't have a hard disk, you'll need to upgrade to a hard disk. If you have a hard disk, you'll need to set SMARTdrive to use a hard disk. If you have a hard disk, you'll need to set SMARTdrive to use a hard disk. If you have a hard disk, you'll need to set SMARTdrive to use a hard disk.

3) **286 with 2MB RAM:** Set SMARTdrive to Standard Mode (STD) for the best speed. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster.

4) **386 with 1MB RAM:** Set SMARTdrive to Standard Mode (STD) for the best speed. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster.

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6) **486 with 1MB RAM:** Set SMARTdrive to Standard Mode (STD) for the best speed. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster.

General Optimization Tips

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7) **486 with 2MB RAM:** Set SMARTdrive to Standard Mode (STD) for the best speed. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster.

8) **486 with 4MB RAM:** Set SMARTdrive to Standard Mode (STD) for the best speed. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster.

9) **486 with 8MB RAM:** Set SMARTdrive to Standard Mode (STD) for the best speed. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster.

10) **486 with 16MB RAM:** Set SMARTdrive to Standard Mode (STD) for the best speed. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster. Or, setting SMARTdrive to Standard Mode (STD) will make it run faster.



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Publish Like a Pro

Continued from page 18

A well-equipped DTP software should include one of each of the following: a word processor, drawing program, publishing application, plus a selection of fonts and clip art. Many software titles incorporate two or more of these areas. Microsoft Word for Windows 3.0, for example, includes a drawing module and modestly sophisticated layout capabilities (though rarely supported by some reviewer DTP programs). In addition to its obligatory word processing functionality, Word is also the selection of available typeface fonts included with Windows 3.1 (or Windows for Workgroups) and you have a reasonably complete DTP solution.

Word Processing and DTP

One problem with trying to use a word processor as a page-layout program is that it is relatively tough to set up headlines, multiple columns and graphics on a page and move them around as you adjust your layout. PageMaker and other leading DTP titles have what is known as a "picturebox manager" that makes it easy to drag items onto and off of a page. Any designs you have done prior to job by hand will immediately see the value in this way of doing things. I don't recommend using a word processor as a page layout program unless your documents conform to a rigid, set letter or book format. The word processor, headlines and other layout items you put on each page, the more of a hassle it becomes to do it with a word processor.

What's wrong with this picture? On the other hand, some people use a drawing application as their DTP solution. A popular choice is a page-layout program, if you don't want to use one that can page a drawing program is usually not a good choice, as most cannot handle multiple-page documents. CorelDraw is better for general DTP tasks than many of its competitors. Adobe Illustrator, for example, doesn't even support L&A in turn, per. all of these titles have one primary drawback. They are painfully slow when using those few effects as displayed on the screen. A second set of dual-and-triple graphics is possibly only way to work with them. While the fancy effects today's graphics programs are capable of make it extremely easy to create a page that simply won't print, for all of its needs, CorelDraw is one of the worst choices.

That said, there is definitely a place for a drawing program in your DTP arsenal. CorelDraw 10 comes with such an array of clip art and fonts that it is a nearly irresistible bargain. When you look closely, though, CorelDraw's fonts are pretty bad. The owner of local where I live, I quote is said, "Your reader can see a CorelDraw font."

What makes WYSIWYG?

Windows 3.1 brought TrueType fonts to the PC, as System 7 brought them to the Mac. TrueType is the most popular font format for publishing under Windows, while PostScript Type 1 fonts are the dominant standard on the Macintosh. This can be done in TrueType. PostScript on both has more or other type of computer. Most service bureaus (companies where you can

take files created with DTP programs) to have pages printed out on high-quality laserprinters use Type 1 fonts, therefore I recommend that you purchase them in this format. If you are serious about desktop publishing.

TrueType and PostScript Type 1 fonts are both usable without fonts that allow you to display and print text at any point size without "jaggies." These two fonts do, however, for most users won't notice a difference between the print quality of a TrueType font and a Type 1 version of the same typeface.

As far as fonts go, TrueType support is built into both the PC and Mac. To use Type 1 fonts, you need a font-postscript program. Both systems require a program called Adobe Type Manager (ATM). This utility gives installed with some applications (PageMaker and WordPerfect 5.1, for example). Most users can call Adobe Systems (415) 464-2300 and get a copy of ATM for the \$57.50 as a result of a special deal. Apple made an Adobe.

A point, incidentally, is lifted of as much as 100 percent, then it. There are 72 pt "fractional" points per inch. Therefore, the closest you can get to 12 dots per inch. The more WYSIWYG (what you see... what you get) is.

Top DTP Tips

- 1) Check it everything. Print out a document on your local printer to see where errors and then have it printed out at 2400 dots per inch at your local service bureau. Compare the two. How many times you save time will pay more for it.
- 2) Less is more. If there's more on a page is good, but only be right. No. Although

experienced designers can detail rules and still look good, try to stick to a maximum of how different typefaces per page. As a general rule, a block or even half page will look pretty bad, for example, makes a good headline font, while a small font (times, etc.) makes a better font for body text.

- 3) Keep headlines short — six words or less.
- 4) It's All About Communication. If your headline isn't as busy as your layout, no element that your page is hard to read, you're better off your primary goal. Simple, powerful design is better than busy, busy, busy. Sometimes use that graphics are a powerful communication. Use charts, photographs and/or appropriate clip art to keep your reader interested.
- 5) What — You're not a designer? Try the remarkable technique of borrowing from the best. S&W, Copying Great Layouts From Famous Companies. Simply it makes like this you see something you like the look of in a magazine, look in front of all sorts of these magazine design examples. You make a page that looks just similar but uses your words and images. You fit it to your clients. They love it. It is entirely ethical? I doubt it. Legally? Probably. Common? Absolutely. It's not that you will learn what makes a great layout. And before you know it, your own style will start to take form, and all that borrowing will start to seem like what is really in a class with the Masters. ■

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Product Preview

PageMaker 5.0

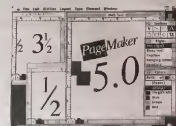
FROM TIDBITS



Perhaps the most impressive upgrade I saw at Macworld was *Adobe PageMaker 5.0*. On the whole, *PageMaker's* enhancements fall in the category of "90s shiny thing," but it's not worth comparing now that they're here. I'm sure some people will write to tell me that *QuarkXPress* has had such success in the market for high-end typesetters and only it is big that *PageMaker* has finally caught up. The single answer is that as far as I know, *PageMaker* is still the most popular desktop publishing program around.

I'm not going to go through these new features in any order, and, incidentally, I'm not going to talk about the standard things that haven't changed. *PageMaker* has too many features to do that, and some would say that *PageMaker* has too many features period.

The main new features I noticed in *PageMaker 5.0* are its capabilities in moving objects between documents and nesting and nesting text and graphics. *PageMaker 5.0* can finally open multiple documents at the same time; previously, up to the *MacOS*, *MacOS*, but has continued to date up to previous from the last decade. *Adobe* added a feature for only seen in a few other programs: the capability to drag an object from one document to another without copying and pasting. The copy/paste metaphor works best in the *Macintosh* metaphor of the *Macintosh*. In today's world of multiple windows, multiple, large and multiple windows, and constant *Macintosh*, *QuarkXPress* is the reason why we shouldn't be able to drag data between the windows, if not applications. I'd like to see



this to more applications.

PageMaker 4.2 added the ability to rotate text in *Wendell* increments, but this feature was generally ignored with desktop — 90 degree rotations is unacceptable. *PageMaker 5.0* should allow these old users with its free rotation of text and graphics in 61 degree increments. You can also nest text and graphics with other text boxes. Oh, and by the way, you can edit text and graphics after inserting them. Something that wasn't very even with 4.2's limited capabilities. This time will be welcome to anyone who does single-page layout of pages and the like.

I appreciate *PageMaker's* new capability of printing non-continuous pages. If you wish to print pages 1, 3, 5 and 12 of a 16-

page document, you just type the page numbers into the page range box, respectively. I'm sure any application that prints should have that feature. *Adobe* finally implemented grouping, an extremely common command in graphics programs, though only in an *Adobe*. This time will be the most impressive feature I noted, but *Adobe* has a lot of more — I'll reproduce some of it here.

I don't wish to imply that *Adobe* fixed everything that might be considered a problem in *PageMaker*. For instance, although *Adobe* completely redesigned the document model, they didn't fix the issue, I found *PageMaker* still extremely weak, especially in defining a new rule in a page style. This process can require a tedious amount of time as many as four manual drag boxes. We have the same problem that day — that it is not clear that *PageMaker* must be used except for design layouts.

My other problem with *PageMaker* is that even after high-end word processors like *Microsoft Word*, low-end word processors like *WriteNow*, and integrated programs like *Microsoft Word* the *Macintosh* *PageMaker* has implemented character styles. *PageMaker* has limited its use to a party related to *PageMaker's* close relationship with *Microsoft Word*, another popular layout style is clear — whenever you need to assign a specific style to one or more words but not an entire paragraph, you can do so on a consistent sample level. Consider the words you might want to do this with: *emphasized*, *bold*, *italic*, *condensed*, in a *medium*, and the *big* one is to hit up my favorite *PageMaker* — but we should grade and compare *Adobe* on its merits. Overall, I think the grade with *PageMaker 5.0* was far a solid upgrade to a popular program.

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New PageMaker Features

- Horizontal and vertical reflection of objects
- Enhanced Control Palette
- Numerically exact positioning and rotation of any object, from its center or any handle
- Specific "nudge" amounts for exact positioning
- Incrementally rotated inline graphics
- Cropping of rotated graphics
- Text mode of the palette visible in layout or story editor views
- Numeric kerning
- Baseline shift
- Process-color separations of *PageMaker* text and graphics, as well as imported CMYK, TIFF, DCS, and EPS images — all without leaving *PageMaker*
- Printing scalable up to 1800%
- Automatic centering of the page on whatever paper you use
- Oversampling for any spot or process color or text
- Spot-to-process conversion at printing
- Choice of printing individual ink of process-color separations
- Automatic scaling of the page to the paper size
- Separate line and fill attributes
- Choice of transparent or opaque dash lines
- Support for up to 58 language dictionaries, plus any number of installable hyphenation dictionaries
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Express Publisher is a full-featured publishing package. Screenshots show available tools, graphics and word processing functions.

Express Publisher

While XP accepts the range of graphics adapters, it does have no high-end and perspective purchasers may wish to clarify their adapter situation before purchasing it. Among the items expected, XP offers reliable screen layout, page, column and solid-state fonts and graphics, text running and shadowing, overstrike control and automatic breaking of column spacing.

The output of popular word processors and ASCII format can be imported. Many effects provided, the program handles TIF, EPS, GIF, GIF, PCL, DSC, ARI, MacDraw, MacDraw, Postscript, Print Shop and PDI publishing graphic images. Layout print communication includes Postscript support.

The working screen is topped by a menu bar at the left with the menu bar. The menu bar is in the upper right corner. Just below, toolbar icons deal with such items as text input and wrapping, framing, drawing, text editing, image expansion and importing effects. Below, the second working window top and left side toolbar has a series of icons, a change box provides information about what is in progress.

PPG, First Publisher

PPG offers a new version of a PPG/Windows software facility. It is a publishing the desktop program in the box is Default II from PPG/Windows. After saving the graphic work, create a default image, a new window and a new document, click the first

and to PPG for importing into PP and view. Working with windows tool.

While the user guide suggests the program will run within 512Kb, it wouldn't even run on it. But would I operate the program, being floppy disk in without a mouse. Promotely following speed at operation, extended or expanded memory isn't put to work, it.

Graphic format accepted are TIF, PCL, EPS, MAC and PCL, and a utility called Snapshot will capture screen images. Drawings created by a number of word processors can be imported and can be up to thirty-two pages long. Document typebars and window icons are included, as are sample page layouts. One last, I note, is a collection of tiny graphic images that can be used to create up to 100,000 icons in a single highlighting tool.

The user guide includes a quick-start section with another screen providing some getting-started details. It includes a brief overview, and from page 10, there is a brief, but not a full, description of the program, the user is instructed to access the user's manual to create a new book. The directory I ended up monitoring it and creating one under the program directory.

Underway, the initial editing screen is uncluttered (except for icons). Across the top, the main menu bar, the page, the font, style, size, color, and, the right, an element bar in some windows contains a tool bar for creating and editing elements.

Continued on page 31



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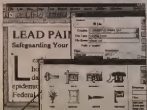
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TECHNIQUES

About the Cover

BY GRAEME BENNETT

This issue's cover was created using a 35mm camera, Adobe Photoshop 2.5, Fractal Painter 2.0 and Aldus FreeHand 3.1.1. Here's how:

The original photo (Star's The Computer Paper's own production manager, Ed Griffin, had at hand) was scanned on one of our Microsoft own scanners, yielding a 2048 color TIFF, which was then loaded into Photoshop, where the image was cropped and its brightness, saturation and contrast adjusted. Using Photoshop's selection and feathering tools, pieces of the wall

floating past in water to a shallow trap. In Fractal Painter's simulation, it behaves exactly the same and thing — it's just less easy to work with. So constructing a fractal simulation in here what I used all the background techniques are in they are described in each book. One such book is called Making Step by Step. You can find it, and others like it, in each store.

Another source of free help information comes from the makers of Lapis, acrylic paints. Henry is South Inc. publishes a free magazine called Lapis: Great Marking with Lapis acrylic paints. You can get it by calling the company at 215-353-6271.

Although the Painter manual contains very little help on making, I had a look at a previous copy of a booklet written by one of the authors of Painter, called Painter 2.0 Companion. The booklet, which will come with a disk of screen records, using Painter's own "Playback Session." Here, you, certainly a multi-step manual written with all the steps you need to produce free rate "composites," "get gels," "pieces," "scrapers" and other special-effects images.

The booklet and disk will step to all registered 3.5 customers to use as it's ready. I finally purchased Painter 2.0 in 1991, and Mac users with an emulor. So. The company is selling the program for just US\$129 (upgrades are US\$79 with any 3.5).

The first used for the letters "DTP" is called Textile. It's from Letter's Fontwork series, taken from the Aldus family was used for the rest of the headlines and other text.

Color separations were generated directly by from Aldus Freehand and output to film at 1240 dots per inch.

Owner: Fraser Design Corp., 1-800-847-7442
Aldus: 1-800-44-ADDS; Aldus: 1-800-525-2508; Linnex: 416-475-7776.

background and dark were copied and pasted in several different dimensions, to form the 100-page. Two new versions of Photoshop, incidentally, is great—much better than previous that previous, it, with a lot of rich new features. Although the version I've been using is a beta release, it's remarkable. Upgrades are US\$129 (US\$129 for a CD-ROM version with extra goodies). I have a feeling it'll be selling more about it in coming years.

The "DTP" sign was created in Fractal Painter 2.0 using that program's great new "liquid media" and anti-handling features.

The technique used to achieve the effect used for the letters and behind the letters "DTP" is called warping. It has been around since the 12th century.

Occasionally, making is the process of

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Another great innovation in the world of computing. Microsoft has clearly turned the best of the third-party utilities into doing three tasks and reduced them. The backup utility, for example, is located into Symantec and is built on Norton Backup.

The anti-virus software, Symantec's, comes from Central Point Software and is based on Central Point Anti-Virus. It includes the ability to scan 80C88 memory and check for known viruses.

To point against the possibility of unknown viruses using the system, the software includes a facility for checking using the file, checking the key files are all the way they should be and a memory resident utility called Virus that can continuously guard against "virus-like" behavior. The Windows utility, meanwhile, is also located from Central Point and has been significantly reduced from the previous version.



Microsoft's Anti-Virus includes the ability to scan both memory and disks for known viruses.

To start with, it now includes Windows version so they don't have to install Windows to install a file. A new level of protection (Data Security) has been added that removes recovery of deleted files even when network drives. Finally and probably



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Desktop Music Publishing

BY GRAEME BENNETT

FOR MANY musicians, the dream of playing an instrument and writing its attached computer instantly transcribe the performance is their music has been a quest comparable to that in the Holy Grail.

Today, such professional consumers available for guitars, violins and wind instruments, keyboards aren't the only ones able to utilize MIDI (Musical Instrument Digital Interface) music. In fact, some smart laptops don't use any instrument other than a computer. They input notes directly from existing sheet music into an on-screen staff and play the music back whether PC.

These are musicians produce available

today that promise results, but performance and print quality varies widely.

MIDI Environmental issues

As I mentioned in my August '92 issue, Thoroughly Modern MIDI Windows 2.1 has added a level of MIDI support to the PC's spreading system that's exciting those of us here. Because the details were spelled out in that issue, I won't repeat them all here, but briefly: Windows adds system-level support for sequenced sound, MIDI copying and MIDI playback. These features make those hard to use more operation system, making Windows the best environment available for computer music without MIDI.

Although, as we'll see a little later in this



Currently, Pro for Windows has no way to support for MIDI Audio cards in MIDI interface.

article, PC MIDI software still lags behind some of the other platforms in certain areas, there is more MIDI software currently in development for the PC than for any other platform.

Because a Windows PC equipped with a sound card can play MIDI files, Windows is the ideal environment for those who want to make music with their sequencer and use sequencers that just want to enjoy listening to music.

If you do decide to hook up a keyboard or other external gear to a PC, Mac or Amiga, you need a MIDI interface. There are numerous models on the market. For the PC, we've heard that the Music Quest MIDI Interface (see the last Windows article) can be programmed for real-time processing. Music Quest MIDI interface is available in basic models, or with tape and SMPTE (time-lapse) of video capture and television engineering synchronization options.

Many audio cards and MIDI add-on kits also include a MIDI interface option.

Portable MIDI

Performing musicians might find a laptop or "laptop" computer a more convenient. Be sure that it has one or more standard PC slots capable of expanding a

MIDI interface. S A Y S O N Technologies (800-372-7383) sells the most impressive MIDI portable I've seen. It weighs about 20 pounds, but is only 10" x 12" in size, which makes the model I tested was loaded with 32 MIDI channels, a Multisync card, a Roland Sound Canvas card, Windows 2.1 and a library of music applications. It's almost the having an orchestra on a box.

Macintosh One-on-Ones have a wide choice of Powerbook and One-on-Ones to choose from. All require an external MIDI interface.

Most users may be able to find one of the discontinued IIxcs portable around at a good price. Use all Amiga 500 models, in this

built-in MIDI ports

There are, at this time, no portable Amiga models. Definitely, Commodore chose a more elegant by a third party repackage Amiga workboards in a portable package.

PC sound options

PC competitors usually implant an add-on card to produce decent sound output, while Mac, Amiga and Atari computers have standard built-in audio capabilities built in.

All three platforms have high-quality sound options available. For the PC, the games software market has played a major role in defining the industry and the popularity of sound-audio cards. The most popular is the Soundblaster, which offers fairly low-quality 8-bit digital sound input and output and a simple 16-bit synthesizer. Most PC sound cards are "Soundblaster compatible," although many, such as intended a better version, are not. An earlier model card called the AdLib is now considered obsolete, although some games still support it.

Better audio cards are said to be "16-bit." When a manufacturer claims that it is 16-bit, or "CD-quality," it usually means that the card plays back audio with



CompuLink AudioLink uses an unconverted but portable interface that looks like a CD player to manage the playback of audio CDs and 8-bit samples.

greater fidelity than an 8-bit card is capable of. Some 16-bit cards, such as Advanced Creative's Ultimate card, come with the ability to play back 16-bit audio, but require an option to record 16-bit audio.

I don't fully stepped into a computer store, where a couple of salesmen were struggling to describe an Ultrastar card.

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Desktop Music

Continued from page 40

The version of the "MIDI" software they used dated 10/3/90, is, so to speak, still an adobe on acceptable level of Soundblaster compatibility. The newest version of the software dated 12/3/90 is better, but still has a lot of problems when running games, according to users. It appears that the Creative Labs is better at playing MIDI than than playing games (for the Windows review by Jack Fildes in this issue last month—see 22).

Other audio cards, such as Roland's CM 32P and Turtle Beach's Multi sound card, provide sampled sounds (generally based on ROM chips) that can create more appealing musical scenes than those provided by simple DM equivalents. These cards in motion with sampled sounds in 20MHz are generally referred to as having "PCM sound."

The Multisound was reviewed for the August '92 issue of The Computer Gamer. At that time, I found the Multisound, with its Creative chip card, the "best sounding sound card ever heard." Having tried the Roland Sound Canvas, I think I can safely say the Roland sounds even better. And because it supports the "G2" sound format, it is supported by virtually every software available. It is worth noting that Windows 3.1 users can easily use the operating system's MIDI Mapper function to assign any wave file to sound to the MIDI port for any software standard. Some MIDI sequencers (like those for the Atari) are not able to do this, too.

Now that Roland's makes more multi and stand-alone products that use "LA inputs," these don't sound as good as the

PCM variety, although better than, say, the CM 32A, which has LA and PCM in one. The disadvantage of PCM modules is that they may not be able to create quality sounds or other system sound effects that are possible with game-oriented cards like the Soundblaster Pro or Ultimate.

Expansys, a California based company, that markets a range of High-Speed, Macintosh-based audio cards and software has recently announced a PC product called Soundix II. It promises to offer 16-bit class-2000 sound on a PC, and it is said to cost about \$2,000 — an expensive price in Vancouver, it is available from Apple (March 94-1997).

Expansys' Macintosh offerings recently include the 16MHz AudioMaster II, a 250,000-samples-per-second sampling rate and real-time processing, as well as Soundix 2nd and Pro built into professional time clocks. The company also has a 16MHz program called Desk that runs any of three sound cards in a digital multitrack recorder.

A Mac version of Soundix II is said to be in the works, but according to one distributor is little advantage in it over its equivalent Macintosh version of Soundix II. Although Desk is only a 4 track recorder, you can bounce tracks in lay down more than four parts. The technique offers pitch, panning, crossfade, and more in a digital real-time tape environment, but because Desk is all digital, you should be able to plug more or number of items into Desk and plug, thereby, should meet the needs of most Mac users.

The company has also released its new version of Sound Tools and Sound Design software for the Atari.

What are standard MIDI files?

Virtually all sequencers and scoring packages have the ability to import and/or export so-called Standard MIDI files.

GS Standard

"General MIDI" guarantees that you will have a reasonable flexibility of the performance of the computer or storage, and it is also used in several other software packages that would be a pain, no matter what kind of instrument or audio card you use.

Several companies (including Roland), which helped define the standard, use that their MIDI gear as being "GS" or "General MIDI" compatible. A audio collection of 32 57 GS-voice data with MIDI performance, conforming to the GS/MIDI MIDI standard, is available.

Owners of the latest generation of electronic pianos (GS-1000) have their own choice into the "GS" equivalent of a piano player. Computer music enthusiasts, too, often find the commercial offerings much better than MIDI material available from the public domain.

Like fact, has also inspired companies like GS/MIDI (and the list is not a complete list) that are now being converted to the latest in General MIDI format. Music software publishers too, are finding the market for the standard equivalent to be a significant market. Product Designers recently released the first "General MIDI" music in General MIDI format. Other publishers are now following.

These files allow a user at any type of computer (PC, Macintosh, Atari ST, Amiga, etc.) to exchange files with any other. These files, at least, have some of the standard files that they used to use a program like MIDIFile Disk to change the file type from "MIDI" to "GS" in order to use the files in the standard file set. This is the only way to use the application. If the previous version of the file is used, you can't print. There are still files available in LA, and companies and elsewhere that they simply find this. Some files might be able to copy into other files.

IBM-compatible, Atari and Amiga computers do not have this problem. They can read each other's files and Mac files without any problems. Provided, of course, that the data comes in the format of a file that can read. All these kinds of computers can read 1.1" GS format files, although Mac and Amiga computers need a special program to do so. Your dealer can supply you with details.

Windows 3.1, incidentally, doesn't support standard MIDI files. You can play back MIDI songs with any Windows-supported audio board.



Prophet's MusicTape supports direct transcription from MIDI

of the top sequences with notation for the user's piano. However, the Windows version's interface couldn't do half what the user's scoring software. At this year's notable Academy announced an upgrade that would do the same things as an all-around generalist (MidiMaster, Mac and Atari), Text that supports notation. Clearly it's an answer on the PC. To be in a new class the excellent new features of 4th April music. The Windows version also supports Roland "GSI"-compatible keyboards and sound cards with a built-in mixer. This editor opens a "GSI" mixing board" interface, but it is not comparable in the way the Mac version is.

Music Master Plus, like Encore and MusicTape, supports direct transcription

from MIDI. This is currently one of the most widely used PC scoring programs. Personal Composer is another of the best-known PC scoring programs. Although early versions of the program were in fact for those past transcription, the latest version is reportedly quite good. Inevitably, the editor of the program, the author, died of cancer last year.

Top Software: Time Sequencing
For MIDI composers, there's also a standard sequencer with integrated score painting. There are multi-track multi-line sequencers in different applications for scoring packages and several notation programs with sequencer integration, but none that

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UNDER
THE
HOOD

Local Bus Video

BY ROGER DRAHN

This month I will explain the technical terms for computer buses: ISA, EISA, MCA, Local Bus, VESA, VL and PCI. I will also touch on the mysterious IRQs (Interrupt Requests), DMA channels and i/o ports. To understand these, you will first have to learn a little more than you wanted to know about how the computer works under the hood. I will try to make it painless.

Butterflies

In analogy, consider what happens when a large family dinner is after dinner. One person brings the dishes to the table. Another washes them. Another does them. Another puts them away. The speed of the whole operation depends on the bottleneck.

The speed of the dinner person: If the dish washer is the fastest, it won't help to recruit a faster dish dryer.

In the interworking assembly line, all people can work at once. In the chaotic 1920s computer assembly line, usually only one component needs at once. However, the bottleneck often is not person. When you are upgrading, spend your money on the bottleneck. Putting it elsewhere else won't be too much.

Under DOS2, or other multi-tasking operating systems, both the CPU and hard disk run much at once. Some certain file systems and tapes run developed in the background. Here is page to how computer

hardware that can run simultaneously with the CPU.

Amplifying

Another analogy is a stereo system. When you buy a \$5000 amplifier and hang on a pair of \$50 speakers. Balance both speed and quality to increase your bang per buck.

The Components

Here are the main components, roughly in order of increasing cost that you need to believe:

1. Power supply. Run machines need higher quality, better cooling fans and smoother output. The power supply takes the 115 volt AC mains and converts it to 12 and 5 volts DC for the components.

2. RAM. This is the fast, short-term memory the computer uses for holding temporary results of its calculations. If you were adding a list with your word processor, most of that list would be relevant in

RAM. Typically, a PC has 4 to 16 MB of RAM. One megabyte is equivalent to 1,048,576 characters. RAM memory is volatile, i.e., when the power shuts off it is forgotten.

3. Peripheral i/o bus or bus for short. This is the set of wires on the motherboard that connects the CPU with the video card and the hard disk adapter. If you don't have what a video card in hard disk adapter is, hang on, I'm getting to that. If you look at a motherboard, you will see a set of right-angled slots. You can also see the parallel copper tracks connecting all the slots with the CPU. These tracks form the peripheral bus.

4. Video Card. This is the card of microchips inside your computer that generates the video signal to produce the picture on your monitor. It converts the image from 60 frames per second.

5. CPU. This is the chip on the motherboard that does arithmetic. A 33 MHz machine is faster than a 33 MHz machine by a ratio of 50:11. An 80486 is about 27% better than a similarly rated 80386. 28.6 is vintage optimization.

6. Hard disk. This is a rotating set of magnetic platters used to store massive amounts of information, typically 40 to 100 MB. Here is where you store all your pro-

grams, every word processing document, spreadsheet and accounting entry. Hard disks are nonvolatile. They continue to store the information even when the power is off. EAT and SCSI are the two popular kinds of hard disk, but you may well find IDE, EIDE and ESD. Each has needs a different kind of adapter card or controller to attach it into the computer.

Most people are so putting too much money into the CPU adapter to the power supply, RAM and video card. The other common error is to put too much money into the bus without making a matching investment in the video card and hard disk controller.

History of the Bus

The original XT computer had only eight ways on the bus for communicating data. The next move for bus-keeping. This allowed the CPU to send one character at a time at a rate over the bus to the hard disk or to the video card.

The follow-on XT computers had 15 ways. This allowed the CPU to send data two characters (16 bits) at a time.

Since then the 386/486 computers have moved to send data two characters (16 bits) at a time. 133 MHz, however, has become a possibility, the industry has still not at 16 bits and at the same speed — 8 MHz is a bit of a decade ago.

The CPUs are now 150-transistor faster than they used to be, but the bus is the same old speed. Guess where the bottleneck is now.

Smoking Around the Bottleneck

There are three approaches to fixing the bus bottleneck problem.

1. Invest in a new local general bus: MCA, ISA, VL and PCI are examples of this approach.

2. Invest auxiliary proprietary buses. Many computer manufacturers, including the IBM, all the main general purpose bus. Recently all 386/486 machines use this approach for RAM. RAM then can run at 33 MHz, almost as fast as the processor can go. Companies such as Intel also use proprietary buses for high speed video.

3. Be clever. Figure out ways to get the same job done without using the slowest ones. For example, Co-processor video and video disk caching are examples of this approach.

The New Buses

The original IBM XT 16-bit bus is called the XT Architecture (Standard Architecture), bus. Most of the clones sold today use this bus. The standard version of the bus works at 8 MHz, though now you can reach it up to 16 MHz, 12 MHz. The adapter cards can run that fast without tripping.

IBM, with the 386, 486, and microcomputers, have a 33 MHz bus, with a highly complex controller called MCA, 1 MCA/33 or 33 MCA/33.

Architectures. MCA comes in several modes, but none of them is compatible with ISA. You need to use special MCA adapter cards. There is less choice on adapters and

Most people err in putting too much money into the CPU relative to the power supply, RAM and video card.

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Local Bus

Continued from page 38

the price is higher for equivalent hardware, IBM has partly abandoned MCA, in favor of the cheaper ISA, for its low-end stations.

A group of IBM's competitors make up

with a line called EISA (Extended Industry Standard Architecture). This line allows you to use both the old ISA adapters and also the new better EISA adapters (each in the same machine).

A collection of about 126 companies called VESA (Video Electronics Standards

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P.C. AUDIO

SoundBoard Soundoff

BY FRANK WILLIARD

A Canadian company has sent a shot across the bow of Microsoft Corporation just as the American software giant was in the process of launching one of the most sophisticated soundboard packages in the industry.

The Canadian company is Advanced Audio Computers Technology Ltd. of Vancouver and the shot is the 16-bit Creative Soundboard card with wave-table synthesis and 32 simultaneous voices.

Its target is the Microsoft Windows Sound System, the ATI Stereo 3D Sound and all the other audio boards on the market currently using FM-synthesis.

FM-synthesis, which creates artificially generated sounds, was the option used by all the early computer games and the first home audio cards at ADSL and SoundBlaster. It has a characteristic "electronic" quality without any of the complex timbre of natural, real sounds.

Wave-table synthesis, on the other hand, uses samples or "patches" of actual sounds to create complex MIDI notes and special effects. To say that it's better than FM-synthesis doesn't do wave-table justice. It's so much of an improvement there is hardly no comparison. "Waveboard" (the name, which also includes and transcends the technology) is the wave-table card.

The sound is crystal clear and the effect is realistic.

What I confused customers is that in addition to talking about "sound cards" also added a bit of completely accurate physics. These soundings — depending on the card — can be in 8-bit or 16-bit mode at 15, 22 or 44 kHz in mono or stereo. The higher

sampling rates produce the best sound, so it's no accident that CDs are recorded at 44,100.

Unsurprisingly high rates also create the biggest files — files that can quickly take over your hard drive.

The best way to look at the issue is, regardless of sampling rate or mode, it is as you would like you just to record studio quality music, or whatever you're more interested in listening to. In other words, and sounds in programs you buy. If you're in the sound game, what you want is a wave-table board.

Windows Sound System

The Windows Sound System is just a wave-

table board. It is an FM synthesis board with 14-bit sampling capability and primarily the best integrated collection of Windows sound handling utilities on the market.

The 3d includes a master level controller, a mixer, a sound control panel, a post-processing function, a CD player, background sounds called "backgrounds" and "scenery," "Voice Plus," a voice activated speech recognition system that is worth the price of the whole package itself.

Installations of the Microsoft board is very because it comes with its own diagnostics.

Just plug it in and it sets itself up, per-

Continued on page 42

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commtalk

BY JAMES MACPARRLANE



Why we need Electronic Highways

Imagine an industrial economy without highways. Obtaining raw materials and distributing manufactured goods is expensive, slow and not very reliable. Transportation becomes an economic barrier to success and growth.

Now there's a knowledge economy without high speed data communications networks. Here, it's not a matter of time. The industrial age has ended. Let's get to it. In a knowledge economy, information becomes both the raw material and the end

product. The cheaper and faster you can both obtain and distribute information the better off you are. As for its data communication gear, Canada is leading along the cable path, not a missing the race highway.

The new economy

Take a look at any high-technology company and you'll be fast-paced to find that this company's leaders are being able to move large amounts of information from place-to-place cheaply and quickly. That's a few examples:

1. Your doctor needs to send you a hospital for magnetic resonance imaging. The images, which could easily take hundreds of megabytes, are simply too large to be transported over a high-speed, long-distance telephone line in any reasonable time.

2. Your doctor must book an appointment to visit the hospital and use their computer to view the images. Beyond this kind of equipment is in high demand you wait three months for an appointment. Meanwhile, a high speed data link could deliver 100 MB per second to your doctor's office in a few minutes.

3. You cut an audio production studio. The person you want for your next show is a musician lives in another city. How do you find this person to put them up in a hotel for a week. It costs up to \$100,000 per week to find this person.

4. A CD quality digital telephone link would have let him person they at home. It would have saved you a bundle and would have made your customer much happier.

5. This is a software developer and you're building his information on a new data compression technique. You just want all of the trade magazines but you find nothing. You make a week of your time looking for an answer. Your customer is waiting.

You could have had the answer in hours if you had access to all within Japan on the spot.

You found him just made a new stock video. You're not that distant as those of the networks will play the video. You're lucky to get on anyone's list.

Now, hand starts to see better. Instead of a week, you have video. You're instantly on the air.

6. You're a home builder and you're in a trade show. Instead of leaving up pictures of your model homes, you establish a live video link from your booth to the end client. You're doing your own business around the house, looking at things that pictures could never show.

Electronic highways

The technology exists for every example I've shown. The problem is the infrastructure to provide that service to people like you and just don't exist.

It's time to bring to delivery system to our homes using a network of switching stations, linked together. Switching system are never designed to be that. That's the reason the telecommunications network.

In the 1950s both the Canadian and

U.S. governments launched giant efforts to build highways to connect the cities and cities. They built a solid and reliable network. In an economy moving away from heavy industry and towards information it's easier to require new highways — electronic highways.

Take a look at the traditional television network industry. Television companies provide a low capacity on-demand. They have individual in-network, single and T-1 networks. A high-capacity one-way link that the broadcaster is in control.

What Canada has is a high-capacity network that can let two people together in a study or a film. We need a multi-media study data network, one that will let us in the next century.

Without this infrastructure, Canada is doomed to become a country that does nothing but export low value natural resources and other trade barrier goods. Welcome to the third world.

Discussion: telecommunications

How can we make use of the information age when we live under the rule of telephone companies that think a rotary phone is a "basic service"?

Where are we headed when the CRTC wants to spend years approving telecommunications services which are neither profitable nor the Japanese are making their demand?

Canada has traditionally been a leader in the telecommunications industry. Take a look at companies like Northern Telecom, Borealis, Bell, and Noranda. We are one of the more cable-TV oriented countries in the world. Where's the telecommunications?

It is up to us and by the way, we're not. Our first step is to get on the air, we'll be up on the air, we'll be up on the air, we'll be up on the air, we'll be up on the air.

It's more than just

I was recently invited to attend an announcement of the Ontario government. Ontario premier Bob Rae presented the findings of an advisory committee on Ontario's long-term telecommunications strategy.

This report warned many of our telecommunications industry in the future economic growth of the country. Unfortunately, it was not a federal program but it did acknowledge many of the issues, both cultural and economic.

The report called for a program to be implemented in the telecommunications industry. Ontario premier Bob Rae presented the findings of an advisory committee on Ontario's long-term telecommunications strategy.



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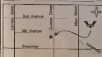
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Soundboard

Continued from page 18

writing screen so let me know what's happening as it goes along. I'm up 246,323, everything went fine. Then I see with the default mouse for the board everything was clearly explained and a demo provided by the board made Windows was a delight to use.

The MIDI feature is completely in, but not better than, standard MIDI synthesizers.

By far the most interesting aspect of the board is the built-in speech recognition function featured in the Speech System. For what this does is create voice prompts of which you give it and then look there in Windows continuously.

Take the children in Program Manager for example. It contains drop-down menus under File, Options, Window and Help. If you double click on File, you get File, Open, Move, Copy, Delete, Properties, Run and Exit Windows. If you speak any of these words, Your Place does it for you, in-

cluding the action just as if you had double clicked on the command to question. It also responds correctly to "help," "quit," "up" and "down," just like the arrows on your keypad.

If File is active you just say "File" and it opens. Then you can say "Menu" and the active list moves to "Open," say "File" or "File" and the keyboard is activated.

The complexity in length of all this are equally astounding. You can see the degree of recognition on a sliding scale from "Approximately" to "Exactly" in addition.

You can see the recording level, save the program to learn your personal inflections, even maintain a library of voice models.

For the physically disabled or anyone who wants to work with both hands just control Windows with the same little Voice Place will be a wonderful utility.

Stevie Uniflexion

Advanced Gravis is a Canadian company in Kitchener, Ont. that began in 1979 when GARY BROWN and GORDON SCOTT/JACOBI two young men. Focused on all computer games, devoted to build a better product. Since then from \$150,000 the firm has to \$1.4 million in 1990, primarily as a result of our recommendations. Today it's a public company with 1,000+ in its largest share holder.

The software also includes "Patch Manager" under Windows that allows users to play every instrument with an on-screen keyboard.

In addition, Advanced Gravis is promising soon to have a MIDI cable adapter that will allow users to hook up any standard MIDI keyboard to their computer.

During a quiet background, the company decided to go into sound boards and become the first manufacturer to get a low-cost new cable board to the American market — this past January.

Because of the noise, the Uniflexion (a 16-bit "G2") is its last. It's not a new nothing inside. Although the hardware worked fine, it was inferior with clearly software that wouldn't work with some games programs and was difficult to install.

It was also inferior with just 16-bit playback, no record capability. An optional 24-bit recording daughter board is promised for April.

That's about it for the last year. The good news is that the latest eight negative side was upgrade it to be sure to reach that the initial release and it includes a 192 instrument and sound FX MIDI patch system that block your own self. The second three from Advanced's former partner company "Star Control 2" is a dramatic play won't follow your own.

The software now includes "Patch Manager" under Windows that allows users to play every instrument with an on-screen keyboard. In addition, Advanced Gravis is promising shortly to have a MIDI cable adapter that will plug into the back of the board through to provide patch. The adapter will allow users to hook up any standard MIDI keyboard to their computer.

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FAX / Modems

ZyXEL U-1496E Modem

The study is still at the preliminary stage and is only a preliminary study. It is not yet clear whether the study is a preliminary study or a preliminary study.

Century Speakers

40. Bottle of amplified product from step 3. Every third track is a negative control. The amplified product with the other 10 samples is in a 96 well microcentrifuge tube. The other 10 samples are:

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MSI	250	Maxtor	250	Maxtor	250	Seagate	250
MSI	260	Seagate	260	Maxtor	260	Seagate	260
MSI	270	Western Digital	270	Maxtor	270	Seagate	270
MSI	280	Maxtor	280	Maxtor	280	Seagate	280
MSI	290	Seagate	290	Maxtor	290	Seagate	290
MSI	300	Western Digital	300	Maxtor	300	Seagate	300
MSI	310	Maxtor	310	Maxtor	310	Seagate	310
MSI	320	Seagate	320	Maxtor	320	Seagate	320
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MSI	350	Seagate	350	Maxtor	350	Seagate	350
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MSI	370	Maxtor	370	Maxtor	370	Seagate	370
MSI	380	Seagate	380	Maxtor	380	Seagate	380
MSI	390	Western Digital	390	Maxtor	390	Seagate	390
MSI	400	Maxtor	400	Maxtor	400	Seagate	400
MSI	410	Seagate	410	Maxtor	410	Seagate	410
MSI	420	Western Digital	420	Maxtor	420	Seagate	420
MSI	430	Maxtor	430	Maxtor	430	Seagate	430
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MSI	460	Maxtor	460	Maxtor	460	Seagate	460
MSI	470	Seagate	470	Maxtor	470	Seagate	470
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Art Expression

Continued from page 46

prints, called *Comments*, comments (Gold called the *Draw Clip Art* icon BT DB20), a new BT (downlarge file format) *Storage* which is usable by Art Expression. An Adobe Illustrator Import module is also included for PageFlow users to use in their projects.

Authoring

The package also includes a separate program called *RAM*, which stands for *Storyboard Author*. With this program you can create

scenes as digital photographs, as well as when you have just programs. With its simplified tools you can crop, edit or landscape with relative ease. It is also Illustrator compatible, which automatically converts back into PageFlow's (IL) all format, you have the *Storyboard* program, also from Soft Logic.

RAM's main use with Art Expression is the conversion of storyboard files to storyboard drawings with a function called *Storyboard*. A separate editor for the *Storyboard* option has editors that control *Storyboard*, *Color*, *IL*, and *Storyboard*. The *Storyboard* editor demonstrates the number of pages used; the

Color to control the appearance of colors and the *Storyboard* conversion for background image (story plots). Completed drawings are saved as a .GIB3D file for use in PageFlow and of course can be picked up by Art Expression.

Manual

Two well laid out manuals are provided. One is a lesson manual with different topics and follow-along exercises for creating them. The other is the main manual, which goes over all the functions. The program's built in help and a quick reference card provide first look-up without paging

2MB memory with two floppies is suggested, but Art Expression (like everything else) is much better on a hard drive.

Enough the manual

Art Expression is compatible with AmigaDOS 1.3.2a and 1.3, or installed on an internal harddisk system. It also works on Amiga HD32 (the new HCA, SuperH4000, H1200) but time are limited to 10 values. 1 MB of Chip RAM is recommended but it will work on older machines with only 512K of this valuable commodity.

Still, memory with two floppies is suggested, but Art Expression (like everything else) is much better on a hard drive. Installation on a hard disk is simple with the new equipment, two hard installation choices for beginners. Installation is advanced extra. Choosing "beginner" would do everything but if you have hard drive partitions you need to go to "advanced" to make it in the partition needed. The "advanced" option allows complete conversion of old installation programs.

Printing is supported in any PostScript or PostScript-compatible printer. Art Expression can print directly to color printers with true-color (RGB or CMYK) and monochrome (grayscale) options. ... well, the technical, at least. I must mention here that I am having trouble with the technical pricing, but the need is undeniable (and the technical support group was one that a review CD is coming out "next week" in some data-driven products).

For detailed information on Art Expression, see page 100.

Sightings Steven M. Johnson



Handphones are sold nationally at different Homecoming Dances. The show, with ethnic show bands, are judged to make capital sweeping table team into the work and more like fun.

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bookreview

BY KEITH SCHENGLI-ROBERTS

Gates

How Microsoft's Mogul Reinvented an Industry — and Made Himself the Richest Man in America.

Authors: Stephen Morris and Paul Anderson.
 Publisher: Doubleday, 1987. 324 pages.
 Price: \$20.95.

While many large computer companies are cutting back just to keep in business, Microsoft is thriving with record profits. This is the stuff that business biographies are built on, and Gates is no different. In fact Gates follows hard on the heels of last year's Bill Gates' biography Hard Drive.

In this exhaustively researched book, Morris and Anderson (renowned Bill Gates, many of his associates and had access to the Microsoft archives. This is not an authorized biography, however, and Gates offers a critical look at the way Microsoft was built. The story of Microsoft is also the story of the personal computing industry.

Computer fever since its' birth, Bill Gates and Microsoft co-founder Paul Allen wrote a version of the BASIC programming language for the first popular personal computer, the Altair, back in 1977. By this time Bill Gates had already started his first solo venture-capital company, TACO, Inc., which made realizations that would automatically create how many can pass by a road over a given amount of time. To get the software right for their little out-cropping, BASIC, Gates and associates made a program on a large PDP-10 computer that mimicked its functions. The Altair was based on a similar processor and when Gates and mor-

gan realized this, they set about building a program to fit the Altair. With that in hand, they created a BASIC that could run on it, and got their first sale. Thus Microsoft was born, thanks to some smart programming and a business concept. From this point on, the biography Bill Gates and Microsoft eventually became the same thing.

One of the most interesting sections of the book looks at Microsoft's long and often stormy relationship with IBM. It begins with Microsoft taking no note on operating system for the launch of the IBM PC back in 1981. When Microsoft was approached by IBM for an operating system for the IBM PC, Microsoft didn't have one. Breaking the potential of selling an operating system to IBM, Bill Gates bought an Seattle Computer's QDOS ("Quick and Dirty Operating System"), made some minor changes to fit the code, and then sold licensing rights for the code Microsoft QDOS to IBM. This date-legendary story in the computer industry is wonderfully portrayed by the authors, and makes for some of the

best reading in the book. It also marks a the increasingly strained relationship between Microsoft and IBM that would, in breaking point over the development of Windows and the OS/2.

The book offers a real insight into how Microsoft operates, and what it is like to work for the company. It is a perspective that defines an interesting high technology, competitive people who are willing to put in long hours — in other words, just like Bill Gates. The other side of this is that many Gates employees "burning out" or the disenchanted on team.

In the end this is not such a biography to Bill Gates but to Microsoft. It is an often fascinating read, but Bill Gates the CEO is really separated from the public and Bill Gates. Thus again, after reading this book you'll probably agree (being wise) of his competitors that there is nothing "faster" about Bill Gates. In short, while we do not find out much about the person Bill Gates, this is a great "biography" of Microsoft. ■



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REVIEW

PCs, DOS, Windows For Dummies

REVIEWED FOR NEWSBYTES BY T. BASS

Author: Andy Rutledge, author of *Windows For Dummies*, Ben Goslin, author of *DOS for Dummies*, and author of several PCs for Dummies.

PCs: DOS Books Worldwide Inc., 148 Beaver Rd., Suite #10, San Mateo, CA 94402, 650-554-1296.

Price: \$24.95, \$21.95 Canada.

Rating: 4.5 (on a scale of 1-4) (MSB 88).

Summary: 100+ illustrated series of books are informative and helpful for those with little or no computer experience.

One of the little-known functions of windows called "Diagnosis" Windows has a utility that will log the errors made

between Windows and the program(s) it's working with it. This helps to determine the problem and may expedite the Windows environment. The log may not make sense to you, but the information is important to anyone at technical support.

If you are comfortable with computers and you think you "have to" questions, all the more suggest these books. ■

Rating:

MSB/MSB (4): These books do bring the proper to personal computer users with great ease and good humor. If you need to work with a computer that has DOS 5, for a start, reading

system **MSB/MSB**, but do not know what questions to ask for how to work with go to it at the end. The \$24.95 suggest all retail price is very reasonable for what you're getting.

AVAILABILITY: (4) DOS Books are well distributed in departments such as E. D. Books, Bookends, etc. Also, any store that carries computer books. Contact: DOS, 800-451-7638 for the series for \$23.95 each.

CONTACT: DOS, 415-542-3634.

Dan Goslin is considered a DOS expert and has a couple of other books out on the subject. He's got a great sense of humor which helps to lighten the mood while expending information. The three books reviewed here, *Windows For Dummies*, *DOS for Dummies*, and *PCs for Dummies*, are written by Ben Goslin, a nationally recognized computer reviewer. Andy Rutledge is a Windows expert who also operates an MSB-related news column.

PCs for Dummies by both authors is designed to give the novice computer user the basics, from organizing one's work space to troubleshooting a PC problem. *PCs for Dummies* is divided into parts such as, introducing the computer, working with the computer, and the fun of it.

The various chapters walk one through the components and external parts. The descriptions show you how to turn the machine on, use the keyboard, load the discs and other basic operations and controls. There are also important tips, such as "Your System is not a coffee filter" which addresses a common problem with having drinks and food around your computer. There are very readable explanations of DOS, software, LANs, Windows and various normally used. Really as in all the "Dummies" series, there is a lot of text and a lot of diagrams on various PC-related subjects.

The second book in the *DOS for Dummies* by Ben Goslin is *DOS for Dummies* by Ben Goslin, which targets beginners afraid of DOS and computers. The book, approaching the subject of DOS with humor, starts with the basics and covers the more complex areas, breaking down ideas into simple elements. There is also a lot of DOS 5 commands, including those that are not frequently used and infrequently used those which are very used and are not well understood. The few books give much advice as to what occurred from you are better off without. This book will be a great help if you are afraid of DOS 5, and you wish to experiment with Windows and DOS 5. DOS programs are faster than the Windows-oriented versions.

The third book, *Windows for Dummies* by Andy Rutledge, is aimed at the user at the end of the DOS 5 book of the series. It introduces Windows basics, including

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MAC REVIEW

Beating the System

BY GRAEME BENNETT

You've probably seen the ads for PC and Mac, sagging on the cover of the business sections of *The Globe and Mail* and elsewhere.

"Why your next IBM Computer Should Be a Macintosh," the pitch begins, accompanied by a picture of a business laptop 1.23 screen running on a Powerbook portable.

* But a whole world of MS-DOS software, 2 processors.

In plain glass, it is an attractive proposition: "It's like having two computers in

Products: SoftPC with Windows version 3.0/3.1, 386/486, Pentium/486.

Summary: performance is only fair, even at high-end MACs, but the program may be all it takes to get a Macintosh to handle most corporate PC-only purchasing requirements.

one." Upon closer inspection, though, we discovered the crippling weakness of this two-headed beast. This can't be a PC 100% clone.

Indeed, it seems a bit strange — running a 386/80 Quadra into a copy with 286 clone. Since performance is clearly not the main issue here, let's look at the reasons why Mac users might want to run DOS or Windows applications.

1. A required application is only available for DOS or Windows.
2. The user wishes to learn or teach one or more DOS or Windows applications.
3. The user wishes to access data on a PC, with floppy disk or CD-ROM.
4. The user wishes to access data on a shared network.
5. Corporate purchase requirements stipulate that all computers must be IBM compatible and/or be capable of running Microsoft Windows.
6. The user has switched from a PC to a Macintosh, but has a considerable investment in DOS or Windows software and wishes to make the most of that investment.

There are undoubtedly other reasons, but these, I suspect, are the main ones. All are well-covered, although performance considerations make "non-essential" (1) can't call the most viable ones.

Here are my initial ideas that SoftPC is not appropriate for:

- 1) Demarcations of applications — especially graphics-intensive ones.
- 2) Applications where processing or display speed is a prime concern.
- 3) Because of its running on already overloaded hardware, SoftPC is not an ideal choice for testing PC software, although SoftPC appears to be remarkably compatible. Certainly, it is inappropriate for any PC applications that depend upon hardware add-ons (386, 486, cache, floating or 24-bit video, joystick, etc.) with the exception of floppy drives, CD-ROMs, modems and printers.

Installation

I tested SoftPC Professional and SoftPC with Windows. The process for both programs differs from a slight vagueness of installation procedure, but only the latter contains completely missing information. The manual instructs the user to copy a file called "SoftPCClass" to the hard drive as part of the installation process. As it turned out, I had to copy "SoftPCClass" and "SoftPCClass2" to the drive in order to get the installation process to work as intended in the documentation. During installation, the system builds a file that stores data on PC hard-disk partitions. This file needs to be 13.5M or larger. SoftPC does not actually partition your Mac hard drive.

Configuration

As shipped, SoftPC with Windows is configured to emulate a 286 with one

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Fractal Design Painter 2.0

ATCA, CALIFORNIA—After a fractal design is easy to make a major upgrade to the Painter program to both the Macintosh and the Windows versions. Version 2.0 of Painter will incorporate more than 20 new features.

The 2.0L, the primary goal was to make Painter equal the natural tools found in traditional painting. But with Painter 2.0 we have taken painting into the next century by adding natural media tools (tools that only the computer can do) — custom techniques that traditional artists and photo retouchers could only dream of until now — said Mark Zisman, president of Fractal Design.

An example of this is Fractal's Liquid Media. These tools simulate the viscous effects of pouring pigments through some sort of liquid. For example, you can now pour ink as if it is being a piece of liquid glass. There are a lot of other different "liquid" features in this new version.

Another new feature is the ability to see brush strokes in real time.

Fractal Design has created a brush called "Ice," which adds texture and shape. High-contrast to a person and also creates a very

look above the horizon line. The effect looks like fire moving, it head line (the drawing, and the line above the horizon line to have fire waves in it).

Another enhancement is the addition of a set of image manipulation features. Color effects, photo-manipulating and image tools, a box of the user to add photo images into the artwork and get the first work ready for printing.

Fractal Design has also added the capacity for a user to use all of a brush or a menu and paint them simultaneously on the screen. The user can display all of the new tools palette in a separate space. Many users have requested additional text and shape edge tools — Fractal Design has added these as well.

The Macintosh version of Painter 2.0 was demonstrated at the MacWorld show in San Francisco and is being shipped. The Windows version will be shipped sometime this month. Anyone who purchased the program

after November 1, 1992 will receive a free upgrade. Those who purchased the program prior to that date will be able to upgrade to 2.0 for \$15.99.

Public Contact: Fractal Design, 408-668-0008

Canadian Product Launch Update

TORONTO, ONTARIO (NS) — Borel Canadian Services Inc. (Borel) has announced the launch of its new products from Computer Associates, Actix and Fractal, and a new Canadian office for software systems, a U.S.-based software vendor.

Computer Associates Canada Inc. announced CA-Clipper 3.2 at the same time as its U.S. parent company (Borel), February 23.

CA-Clipper 3.2 is available in supported CA-Clipper developers for a limited time at \$19.99. The launch date offer also provides the company's CA-Clipper database development software for Windows CA-Clipper Tools, or the CA-Clipper Compiler for the IBM PC for an additional \$19.99. CA has not set a date for the expiry of this offer, a spokesman said.

Users of other Borel products, such as MicroWorld, Borel or Borel International's Office, can receive the upgrade and use of the above products for \$19.99 an upgrade.

CA-Clipper Tools, first priced at \$19.99, is available to registered users of CA-Clipper Tools 8 (formerly MicroWorld Tools) at a special price of \$19.99.

Actix Canada and Borel and support programs announced offices in the United States (Borel), February 23. Actix will open a new office and support department in the United States, Actix Borel, ActixWay Borel and YWOL, Borel and in Actix product lines. The program includes a limited one-year, annual support, plus telephone support for as long as the

customer uses the system (Borel for the first year only).

Borel also offers Borel and Borel-based support services and a 24-hour system replacement program for users of its Borel products. To support the new services, Actix Canada upgraded its telephone system, serving it can receive 95 per cent of customer inquiries within 30 minutes.

The Information Systems Group at Fractal of Canada Inc. at Markham, Ont., began shipping a new version of its 1990 portfolio during a 30-day period. The 1990-91 portfolio, the 1990-91 portfolio, with a 100-page hard disk and first quarter of income, and a color catalog of the 1990-91 portfolio, is available 100 pages are \$27.99 for the 1990-91 portfolio and \$19.99 for the 1990-91 portfolio.

Finally, software systems for the Borel-based software system, supported in the Canadian office for Borel, which includes users of the 1990-91 portfolio. Software Systems has relationships with most of the major software publishers, including MicroWorld, Lotus, IBM, Borel and WinPro.

Contact: Computer Associates Canada, 438-668-0008; Actix Advertising for Actix Canada, 416-250-5880; or 416-250-5880; Borel Canada, 416-490-5478; or 416-490-5478; Borel Canada, 416-250-5880; or 416-250-5880.

TAX

Cost Of GUIs High, But Worth It, Survey Says

SEATTLE, WASHINGTON (ENR) — A survey carried out by the Microcomputers Management Association (MMA) says that the real cost of entering in a graphical user interface (GUI) is high but is much less than the hype.

to a family of 462 corporate intranets. The MSA claims that it lists 13,400 per annum to report to Windows on average. However, of those surveyed, the majority said the move was a strategic one to make their company more competitive in the market place. Also, the survey made it clear evidence that limited productivity is offsetting the cost of the move, among other

On the network graphical user interfaces on the market, the MMG said that the value of 0.62 is a "good" expectation.

ed to increase. Apple Watchmakers are expected to decrease, however. Mac users jumped and they were extremely satisfied with their new operating system, but that they didn't see Watch as an important part of their organization. However, the number of RISC-based installations are increasing; report says and Unix-based machines are expected to increase slightly.

Microsoft Windows is the predominant GUI implemented in enterprise systems.

PCs, despite the fact that most of those surveyed were IBM personal computers. This Corporate America is expected to implement faster, more powerful personal computers, applying Midrange PCs. While IBM-based PCs will remain in the mix, the survey indicates IBM-based PCs are expected to become predominant within the next 12 months.

Investments in secondary and larger-band (600-MHz) air are expected to increase in the corporate environment. In 32 months the mapping of PCS will have either 4 or 6 megahertz (MHz) of 800-MHz and the use of band-edge slots will increase from the 12.5-MHz of 1250-MHz edge up to 41MS = 200-MHz capacity.

Clearly all these not-revealed low-level area networks (LANs) has only 4 percent of the PCS in use were activated. The 400-MHz.

MS-DOS remains the most common operating system in use and there's no end to the SDGs in sight. Prevalence falls off the MS-DOS field steadily. However, the migration to Windows is expected to continue. Surprisingly, even though Windows 9.5 hasn't shipped, one fourth of those surveyed said they plan to use Windows 9.5 in the future.

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Keynote Address: Concentrated PC Power A Concern

POINT-TO-POINT (P2P) — The power of the personal computer is Intel's (P) High Performance is becoming a worry. PC World magazine's Editor-in-Chief Bill Lemmons said at a conference, in particular, Lemmons said at the Intel Keynote address at the PC World/Network World Conference that Microsoft's power dominates major players and could lead to reduced choices for PC users.

The other major power that could be a cause for concern is IBM's mainframe line, Lemmons said.

Noting that Microsoft's profits would see increases of many of its competitors, Lemmons said the software maker is the most powerful entity in the industry, especially with the imminent arrival of Windows NT, its possible spending spree, which will increase Microsoft's in-house power base because it can run on other vendors' chips.

Lemmons also said he would like to see Microsoft's three closest rivals in the applications software business offer their flagship products as a bundle to counter similar deals from Microsoft.

Lemmons acknowledged that both Microsoft and Intel give their customers good value for money and invest in the long term, something he noted is rare in the industry today. However, he said, "they do it in such a strong position now that they can simply spend their competitors' money by buying the products that they control."

Lemmons suggested some more options in the industry could make to reduce Microsoft's and Intel's power, though he admitted he considers them unlikely to happen.

IBM should consider releasing its OS/2 operating system "IBM Windows," he said. A system cost that IBM could not replicate the Windows name, while still open to upgrade, would also appear possible. "I think it would change the psychology of the company," Lemmons said. "If people ask for PCs with Windows, they'll opt for which one. In such choices will be made more on the basis of the software."

Another possibility is that Apple Computer could port its Macintosh operating system to the PC architecture. If Apple did so, Lemmons said, it would give "Apple" market share within a year because the Macintosh's user interface is still superior to Windows in anything else available on the PC.

IBM also said he would like to see Microsoft's three closest rivals in the applications software business — Lotus Development, WordPerfect and Borland International — offer their flagship products as a bundle to counter similar deals from Microsoft.

However, he said, it probably will not happen because each vendor would want a second one of its own products in the bundle — Lotus would want to include the next few word processors, instead of WordPerfect, for instance.

On the chip side, Lemmons said it would take a major PC vendor such as Compaq Computer placing a bulk order with one of the makers of low-cost chips to ensure the success of a stable field competition.

PC vendors need to ensure the survival of an alternate CPU (central processing unit), Lemmons said, but he was doubtful it will happen.

Touching on several other points, Lemmons was positive about the future of Taligent, the operating system vendor between IBM and Apple. "The Windows installed base will be so large by the time Taligent appears on the market that it will be hard for Taligent to have much of an impact, to become seriously competitive."

He said that while IBM may have something to lose from Microsoft's Windows NT, Apple does not in the short term, because the Macintosh's users are better off with prices than that of Windows.

He also called for cooperation between personal computer users and information systems professionals. Because use of technology can either cause spontaneity from below, or be imposed automatically from above, he warned.

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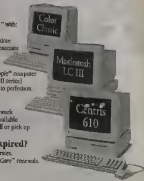
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Autodesk OS/2 "Patch" For DOS AutoCAD

SOLUTIONS LAURENCE, N.J. — Autodesk has announced that patches are now available to run AutoCAD 4D Release 12 for DOS under IBM's OS/2 2.0 operating system. The patches enable users to run multiple instances of AutoCAD as well as running other applications with the popular computer-aided-design (CAD) package.

The company is creating a collaboration effort between Autodesk, IBM and Phil Lip Software for the development of the two patches now available. However, Autodesk said it has not officially supported OS/2 as an operating environment for AutoCAD. Autodesk company officials are also warning users it has not extensively tested the patches, meaning users can do their own risk

assessment on their own.

One patch, the Accuride/Phar Lap 16-megabyte patch, OS/2PC is DOS installers which, after it is run as a DOS application under OS/2 in the IBM DOS Protected mode interface (PMPI) and is available for download via modem on Compuserve to the AutoCAD Release 10 ACAD, library 9.

An IBM OS/2 patch has the same purpose. It enables users to run the IBM OS/2 Compuserve library as well as the OS/2

Seisopak, available by request by calling IBM's Hardware Line.

Contact Autodesk: 415-506-2544, fax 415-461-8000. IBM Hardware: 800-752-2887.

Complete Scanning Package For General Office Use

SANTA CLARA, CALIF.-GENIA (IBM) — UNIMAX Technologies is offering ScanOffice, a complete scanning package for general-purpose office use. ScanOffice includes pre-developed tools for users so that they can create a broad array of documents such as invoices, resolutions, faxes, certificates, proposals and memos. The company said.

ScanOffice users can also employ OCR optical character recognition to replace or enhance typing. ScanOffice includes Microsoft's Publisher for Windows for desktop publishing. Microsoft's WordPerfect for LE version 3.0 is graphics drawing

programs and Picture Publisher LE version 3.0 for image editing, also from Microsoft. Also included is TypeWriter version 3.00 from Lighthouse for OCR text scanning.

Hardware for ScanOffice is the new OA 1, a UNIMAX 486/33MHz gray scale image scanner. The OA 1 scanner can be enhanced through software to achieve a resolution of 1200x1200dpi and is upgradeable to color. ScanOffice supports the full range of personal computer platforms including IBM PC/AT and PCs.

The Scan Office package is suggested retail priced at US\$

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Computer Trends

SAN FRANCISCO, CALIF.-GENIA (IBM) and Motorola are starting to envision the 1990s computer revolution. Their new CPU chips, the PowerPC, is currently being shipped in limited quantities for development purposes.

Large quantities are expected to be available within the next year.

The two companies jointly developed the new chip in hopes it will replace Intel's 486 and Pentium chips as an industry standard. IBM and Apple are reportedly ahead of schedule on the future operating systems for the new chip. It has been rumored that the operating system will incorporate the best features of the Macintosh and OS/2 systems. It also is the new chip and operating system may be the first to run all Macintosh and Windows applications on a single platform. If all of the forecasts hold as a potential competitor as a competitive power, Intel and Microsoft will be forced into substantial competition.

While the home computer market has never lived up to the expectations of the industry, it was a major contributor to the success of the Macintosh II. It last year's fiscal 1990 more Macintosh II PCs were sold than any other single model of computer. According to Apple, more than half of these systems were purchased for home use. More than one-fifth were used in businesses and less than one-quarter used in

schools.

In contrast, Apple unveiled its largest new product introduction last month. The new model was chosen to mark the month the 10 millionth Macintosh computer was sold.

Apple unveiled its largest new product introduction last month. This timeframe was chosen to mark the month the 10 millionth Macintosh computer was sold.

As expected, Apple unveiled its largest new product introduction last month. The new model was chosen to mark the month the 10 millionth Macintosh computer was sold. The new model's power and speed are better than that of Intel's Pentium. The new Central line of single-chip computers is expected to have the greatest impact on the value of Intel's Macintoshes. The Central 486 uses a single-chip and carries a list price of only US\$149. Intel's value of Intel Macs may not fall considerably, however, due to limited availability of the new

Macintosh. Computer shortages have plagued new model manufacturers recently.

As predicted, there have been reports in the computer industry, some manufacturers have moved to the less popular market for greater margins. While Hewlett-Packard and Apple have been the leaders in this market, Compaq is increasing its market share. Dell now over 100 per cent of the company. In all of these products were made in Canada. Dell has now entered the personal computer business. This competition should lead prices lower. For example, the latest Apple prices will use the same engine. In the price is only \$115, or \$1,815 with Modem.

UBC offers course in Operating a Successful Software Business

Entrepreneurs, executives and managers at start-up or high-growth software or other high technology companies are often overwhelmed by the complexity of the problems facing them. They become paralyzed by lack of experience in particular business challenges. A new seminar being offered by UBC hopes to address this challenge. The course, Operating a Successful Software Business, is scheduled for May 28-29 at UBC. The course is aimed at individuals from both technical and business backgrounds who are thinking of starting their own software company. It will also be of relevance to managers and executives in established high-tech companies testing a new entrepreneurial approach. Current and

potential investors in business for the course are: government employees involved in the high tech sector and job seekers from the course.

The course begins with the structure of the software industry and its operation. Students will then be taught how to search systematically for innovative opportunities with information technology and how to evaluate them as entrepreneurial ventures. Other features of the course are: interactive assignments; teaching methods, software tools, sample pitches and sales materials. Cost is \$495 per person, or \$645 for two or more people (see the same registration).

Contact: UBC Continuing Programs, Faculty of Commerce, UBC 604-822-8420

Novell Network 4.0 Arrives

WILKINSON, I.C. (NO) — Novell has made its long-awaited announcement of NetWare 4.0, which will ship March 31. A beta version took NetWare into a series of other versions of the product "should be provided to an audience."

NetWare has become the standard network operating system in the last few years, almost as soon as it is richer as MS-DOS, and Novell has sought to extend its operating system reach by purchasing AT&T's Unix System Labs and Digital Research's OS/2 in recent years.

The new version is a huge upgrade in capabilities and will be a regular basis of work for system administrators. According to Novell's sources, who are experienced NetWare users and have been beta-testing the product, but the effort will be made to, they will increase of a kind of new features, which are implemented in an object-oriented manner, making other network improvements easier to implement. The new version is a 32-bit and compact that Novell has begun distributing it to beta testers on a CD-ROM disc.

The most important feature of the new NetWare, however, is its integration with Unix, which Novell says makes it a code plant "exceptional solution" for its customers. Novell says this version the product can now provide network services regardless of host, distance, location and network diversity, including multi-user, multi-ple file-based, multi-protocol and multi-ple server systems.

A key new capability is called NetWare Directory Services, or NDS. This provides a single view of the network, reducing administrative costs. Users can now security and auditing capabilities using public key cryptography, improvements in the use of bandwidth to reflect the size of wide area networking, new management capabilities and support for multiple computer languages.

Novell is using this version of NetWare to get its users across every other operating system, and one target service area is the remote office managers to help DOS, Windows and OS/2 clients, as well as NetWare 4.0 can also run in a non-dedicated mode under OS/2 2.0. NetWare 4.0 is

OS/2 will be available in an edition product shortly after the release of NetWare 4.0. Users will be able to make use of utilities that generate the launch of information from other NetWare binders in the new NetWare 4.0 directory.

A new set of 32-bit security company announcements are expected in the wake of Novell's statement that it is working closely with developers on what it calls NetWare Loadable Modules or NLMs. Some will work under NetWare 3.11 NLMs and be compatible with 4.0, others will be designed around new 4.0 capabilities. Like NetWare Directory Services.

Novell areas of new growth work it will be the customers to upgrade and use the new capabilities, said it will have certified. NetWare's importance, followed through continued education, training, ready to help with all on the day

the product ships. They'll be made with a three-day update for experienced network administrators, a two-day workshop on installing a NetWare 4.0 system and a two-day network installation course. French, Italian, German and Spanish versions will be available shortly after the main product ships, and a Japanese version should be announced later this year. Prices start at US\$1,215 for the user and the is \$17,995 for the 1,000-user configuration.

Novell also introduced to NDS Gateway, a 32-bit-based system to enhance the NetWare environment into the Unix world. This means users can access NetWare file systems from an outside Unix system as easily as they can access NetWare servers. Novell said. All of this is done using techniques provided by the user's native operating system, even Microsoft Windows and OS/2. The gateway also allows for creating and maintaining, and security is provided through NetWare. The gateway consists of NetWare Loadable Modules, or NLMs, will be for NetWare 3.11. A version for NetWare 4.0 is under development. Prices range from \$1,200 for the user to \$12,495 for 250 users, and it becomes available April 1.

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Corel, Motion Works in Marketing Pact

VANCOUVER, BRITISH COLUMBIA (ENR) — Motion Works, a developer of audio/visual cards and CD-ROM titles, has announced a marketing agreement with Ottawa software developer Corel.

Under the agreement, Corel will take over the marketing of Motion Works' products, leaving the Vancouver-based firm to concentrate on development.

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"It's a marriage of two companies with inherent strengths," said Bob Lunde, a spokesman for Motion Works.

Headed by McCallum, chief executive of Motion Works, said that Corel will use its strong marketing organization to sell his company's existing products, which include animation software for the Apple

Macintosh and Microsoft Windows, as well as two computer-aided multi-media marketing CD-ROM titles, the Prime Time CD.

Motion Works will focus on developing new products, particularly further CD-ROM titles, he said.

"Building a marketing channel for small companies is one of the biggest challenges ever developed," he said. "We're excited by implementing our Corel's established presence, he hopes Motion Works will be able to avoid some of the problems small companies often face in keeping products in market.

Motion Works had revenues of about C\$1 million in 1992. McCallum said. Though in the Corel deal, the company hopes to "boost or sustain" average performance of C\$4.5 million to C\$5.5 million in 1993, he added.

Motion Works had earlier licensed animation software and other multimedia technology (ENR) which the company will see reduce debts to Corel.

"We're solidifying our relationship with Corel now and now," he said, and while the deal eventually means Motion Works from the day-to-day selling of its products, he said, he will not make any of the company's general marketing staff lose their jobs. With a view to that, he said, Motion Works has been careful to hire marketing people who could develop into a full-time corporate role in a development-oriented company.

The deal gives Corel the right to first refusal on all future Motion Works products.

Contact: Motion Works, 604-666-8875.

Ambra Enterprise PCs From IBM Canada Unit

MILWAUKEE, WISCONSIN (ENR) — EpcorComp, the computer subsidiary of IBM Canada Ltd., is broadening its business to include mid-sized computer buyers as well as the home and small business market.

EpcorComp has launched the Ambra Enterprise and Enterprise Max lines of personal computers, which have hardware specifications similar to those of its existing models but are aimed at corporate buyers. EpcorComp has also chosen a different, the Windows approach for the new models, rather than selling through deals as it does with its smaller and EpcorComp desktop and laptop products. It will market the Enterprise and Enterprise Max machines through a toll-free telephone order line.

While some buyers like to look at PCs before they buy, said Anne Torgeson, chief operating officer of EpcorComp, corporate buyers usually know just what they want. "What they're looking for is a standard way to acquire the product."

Torgeson said that while the new models cover about the same range of processors as other Ambra models, they tend to have more features than the machines aimed at home and small-business buyers. The Enterprise, like the Enterprise and Enterprise Max PCs have full PS/2 keyboard and are pre-installed with larger hard drives and more memory in standard configurations.

The Ambra Enterprise has variants of the new 486, ranging from a 33-megahertz 386SX-based computer to a 66-megahertz 486DX2 machine. Prices range from C\$1,499 to C\$3,199. Torgeson said. Machines in this line come with drive bays for hard drives and other storage devices and have expansion slots. For computers of memory is standard, 64 386- or 330-megahertz hard disk drives are included, depending on the model.

All Ambra Enterprise models are supported with DOS 5.0 and Microsoft Windows 3.1.

The Enterprise Max line has six models, based on various 486 processors ranging from a 33-megahertz 486SX to a 66-megahertz 486DX2. Six expansion slots and drive bays are standard. Depending on the model, the Enterprise Max machines come with two or eight megabytes and a 100- or 200-megabyte hard drive. Prices range from C\$2,149 to C\$3,199.

The Enterprise Max models are sold with either DOS 5.0 and Windows 3.1, or optionally on some models, IBM iSeries 2.0.

All the models include an Ultra VGA display monitor, a mouse and a 3.5-inch, 1.44-megabyte diskette drive.

Contact: EpcorComp, 1-800-568-0454 ext. 260-7000.

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New For Unix - cc:Mail X.400 Gateway

VANCOUVER, BRITISH COLUMBIA (PUB) — UDSave has announced Message 400 Gateway to cc:Mail, a gateway from Lotus Development Corp.'s cc:Mail electronic mail software to the X.400 standard for EUC Unix, Sun SPARC and Tandem Integrity built systems Unix platforms.

While in Mail X.400 gateway software exists for DOS machines, with Lotus Chang product managers for the maker of X.400 software, customers have complained that DOS machines cannot handle the storage in size of larger heterogeneous networks.

Based on UDSave's Message 400 X.400 transport, Lotus Gateway to cc:Mail can be configured to run as a dedicated gateway node, in conjunction with other UDSave gateway products, or as an optional add-on to existing Message 400 message transfer agents (MTAs).

The gateway will be of interest mainly to large organizations with extensive mail systems that handle multiple hardware and software platforms, Chang said.

UDSave also offers other products based on Message 400, including Message 400 X.400 Mail Gateway for Unix, and related Message 400 Gateway for Microsoft Mail, Message 400 Mail Access Unix, Message 400 Physical Gateway Access Unix, Message 400 X.400 for gateway, applications and network interfaces, and Message 400 network support modules for X.25, TCP/IP, and communications networks, and Decware 3000 X.400 support.

Contact: Jeri Chang, Offshore 604-426-2882.



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Canada Product Launch Update

Microsoft, Ottawa (July 10) — On January 25, only a few days before its parent company in the U.S., San Microsystems of Canada unveiled its Network Technical Series (NTS) January 22, applying the system will soon be available C3170.

Microsoft Canada launched the company's first advanced graphics super-computer and the new integrated business workstation (NTS), January 26, at well as its Challenge and Power Challenge series, in the Canadian market on January 27. Prior to the NTS workstation will start at less than C\$10,000, the company said. Prior to the top-of-the-line Power Challenge supercomputing system will begin at about C\$175,000.

British Columbia Software and Services for Windows (BSCS), January 28 is available immediately in Canada. The minimum price in Canada is C\$10,000 until April 30. David MacGillivray, president of British Columbia, said the first price will rise to about C\$175,000 (like) although upgrades and non-price upgrades will remain in the C\$170 range.

British Columbia also announced a 90-day price guarantee on its Quantum Pro spreadsheet software, which will be available for C\$124.95 until April 30.

British Columbia Canada, 406-228-001 ext. 141; fax 406-228-012; 2000-2000 Canada, 410-534-7471; Sun Canada, 410-413-394.

Windows Software Hot In 1992, Says Dataquest

SAN JOSE, CALIFORNIA (July 10) — Sales of application software for the Microsoft Windows operating environment have increased a whopping 128 percent in 1992, according to a survey released by Dataquest.

Of all software applications, the top five vendors, Microsoft, Lotus, McDonnell-Power and Symantec, combined for 74 percent of the market in 1992. Dataquest estimates that Microsoft's revenue for software applications nearly doubled, from \$181,193,300,000 in 1991 to

\$351,076,100,000 in 1992. The estimated total revenue for software applications was up 60 percent over 1991 to an all-time high of \$1,017,438,100,000 in 1992.

Emerging from the top vendors list "Emerging" companies, the top five vendors, Microsoft, Lotus, McDonnell-Power and Symantec, combined for 74 percent of the market in 1992. Dataquest estimates that Microsoft's revenue for software applications nearly doubled, from \$181,193,300,000 in 1991 to

Source: Dataquest, 406-437-4012.

Microsoft Denied a Trademark on Windows Name

WASHINGTON, DC (July 10) — A preliminary decision by the U.S. Patent and Trademark Office has denied a request by Microsoft to deny the company's application to make "Windows" a protected trademark name.

Although the decision is unlikely to put much of a dent in Microsoft's market share of the market, had it gone the other way, it could have been difficult for other publishers.

The "Windows" term approved as a phrase trademark. It would have made it much more difficult for competitors to market Windows-compatible programs.

In denying the application, the Patent Office said that the word "Windows" was just too generic to warrant trademark protection, which would have allowed the company to block other software publishers from advertising any product with the word "Windows" in its name.

This would have made it difficult for competitors to promote their programs, which are designed to operate in the Microsoft Windows environment.

The decision does not affect Microsoft's ownership in copyright protection of its Windows program in any way, and it does not highly illegal to copy and sell Microsoft's program. What the decision does affect is the word "Windows" and application programs can compete with third party developers.

Many people confuse patents, trade marks and copyright. Each usually covers

different types of creative properties and offers different protection.

Patents must be granted by a government agency, and to be approved there must also contain new ideas or processes, or incorporate a novel improvement on existing processes. Patents protect ideas, not only from duplicating a patented product, but from making slight changes and then applying to be legal of patent claims.

Trademarks, which are not granted by a government agency, and only protect the size of a brand, such as "Kleenex," and not the actual product. These many companies make Kleenex, but only one (Kleenee) is "Kleenex."

A copyright, which is often used to protect software from piracy or legal copying, can restrict official manipulation and reproduction, but actually has legal implications in a patent case — whether the author is writing a book or creating a word processing program.

Software can be patented, copyrighted, and/or protected by trademark. Microsoft Windows is already copyrighted as it cannot be copied, but the word "Windows" is not protected.

Microsoft, which had been up shortly before the announcement of the rejection of the company's trademark application, was only down slightly since then opening the real day, indicating that the news had little impact on investors. The company can still appeal the ruling.



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